# CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

**NABL** - Accredited Laboratory as per ISO / IEC-17025 : 2005

Job No.: CTCE/BBMP/W.No.08/KRIDL/CUBE/2013-14 28.04.2014

## TEST REPORT ON CONCRETE CUBES

| | |
|---|---|
| Client | : **Asst. Executive Engineer,** Kodigahalli Sub Division, BBMP, Bangalore. |
| Agency | : **Technical Manager,** KRIDL, Bangalore. |
| Name of the work | : Improvements to Roads and Drains at Shanthivana in Ward No.08, BBMP, Bangalore. |
| Reference | : AEE/KH/434/2013-14 Dated: 26.03.2014 |
| Sample ID | : Drain Concrete |
| Size of cubes | : 150mmx150mmx150mm |
| Cross Sectional Area | : 22500 $mm^2$ |
| Technical Reference | : IS: 516-1959 (Reaffirmed 2008) |
| Grade of Concrete | : $M_{20}$ |
| Compressive Strength as on | : $28^{th}$ day |

| Sl.No. | Date of casting | Date of testing | Weight of cube (Kg) | Failure load (KN) | Compressive strength ($N/mm^2$) |
|---|---|---|---|---|---|
| 1 | 31.03.2014 | 28.04.2014 | 8.132 | 479.6 | 21.32 |
| 2 | 31.03.2014 | 28.04.2014 | 8.366 | 512.6 | 22.78 |
| 3 | 31.03.2014 | 28.04.2014 | 8.299 | 485.2 | 21.56 |

Note:

1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the labor.
3. Any Query regarding the report must be reported within 15 days from the date of testing.

M/s. Civil-Tech Consultants & Engineers
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05.04.2014

## GRADATION FOR WMM
## MORTH TABLE-400-11

**Client** : **Asst. Executive Engineer,** Kodigahalli Sub Division, BBMP, Bangalore.

**Agency** : **Technical Manager,** KRIDL, Bangalore.

**Name of Work** : Improvements to Roads and Drains at Shanthivana in Ward No.08, BBMP, Bangalore.

**Reference** : AEE/KH/434/2013-14 Dated: 26.03.2014

Date of Testing : 05.04.2014

Material : WMM

Sample Location : WMM Mix Plant

Oven Dry Wt (gm): 26200

| Is Sieve Size in mm | Weight Retained (gm) | Cumulative Weight Retained (gm) | Cumulative % of Retained | Cumulative % of Passing | Spec.Limits |
|---|---|---|---|---|---|
| 53 | 0 | 0 | 0 | 100 | 100 |
| 45 | 880 | 880 | 3.4 | 96.6 | 95-100 |
| 22.4 | 5560 | 6440 | 24.6 | 75.4 | 60-80 |
| 11.2 | 6020 | 12460 | 47.6 | 52.4 | 40-60 |
| 4.75 | 4520 | 16980 | 64.8 | 35.2 | 25-40 |
| 2.36 | 3885 | 20865 | 79.6 | 20.4 | 15-30 |
| 0.600 | 2355 | 23220 | 88.6 | 11.4 | 8-22 |
| 0.075 | 2595 | 25815 | 98.5 | 1.5 | 0-8 |

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Job No.: CTCE/BBMP/W.No.08/KRIDL/SDBC/Bitumen/2013-14 29.04.2014

## BITUMEN CONTENT AND GRADATION DETERMINATION OF SEMI DENSE BITUMINOUS CONCRETE MIX

**As per IS2386 and IRC:SP:11-1984**

| | |
|---|---|
| CLIENT | **Asst. Executive Engineer,** Kodigahalli Sub Division, BBMP, Bangalore. |
| AGENCY | **Technical Manager,** KRIDL, Bangalore. |
| NAME OF THE WORK | Improvements to Roads and Drains at Shanthivana in Ward No.08, BBMP, Bangalore. |
| REFERENCE | AEE/KH/434/2013-14 Dated: 26.03.2014 |
| SAMPLE I/D | Roads and Drains at Shanthivana in Ward No.08 |
| DATE OF TESTING | 29.04.2014 |

### BITUMEN CONTENT DETERMINATION

| Description | Trail 1 | Trail 2 |
|---|---|---|
| 1. Weight of Mixture before Test, g | 500 | 500 |
| 2. Weight of Mixture after Test, g | 473.5 | 474 |
| 3. Weight of Asphalt and Mineral matter Extracted, | - | - |
| 4. Weight of Mineral Matter, g. | - | - |
| 5. Weight of Ash, g | | |
| 6. Weight of Bitumen Extracted, g. (corrected) | 26.5 | 26.00 |
| 7. Bitumen content in % | 5.30 | 5.20 |
| 8. Average | **5.25** | |

### GRADATION AFTER EXTRACTION

| SIEVE SIZE | Trail 1 | | | | JOBMIX |
|---|---|---|---|---|---|
| mm | Weight Retained, gm | % Retained | %Cummulative Retained | % Passing | Gradation |
| 13.2 | 0 | 0 | 0 | 100 | 100 |
| 9.5 | 39.63 | 8.37 | 8.37 | 91.63 | 90-100 |
| 4.75 | 260.3 | 54.97 | 63.34 | 36.66 | 35-51 |
| 2.36 | 53.23 | 11.24 | 74.59 | 25.41 | 24-39 |
| 1.18 | 41.23 | 8.71 | 83.29 | 16.71 | 15-30 |
| 0.3 | 26.58 | 5.61 | 88.91 | 11.09 | 9-19 |
| 0.075 | 28.55 | 6.03 | 94.94 | 5.06 | 3-8 |

| SIEVE SIZE | Trail 2 | | | | JOBMIX |
|---|---|---|---|---|---|
| mm | Weight Retained, gm | % Retained | %Cummulative Retained | % Passing | Gradation |
| 13.2 | 0 | 0 | 0 | 100 | 100 |
| 9.5 | 28.55 | 5.71 | 5.71 | 94.29 | 90-100 |
| 4.75 | 259.6 | 51.92 | 57.63 | 42.37 | 35-51 |
| 2.36 | 85.69 | 17.14 | 74.77 | 25.23 | 24-39 |
| 1.18 | 43.52 | 8.70 | 83.47 | 16.53 | 15-30 |
| 0.3 | 32.56 | 6.51 | 89.98 | 10.02 | 9-19 |
| 0.075 | 25.85 | 5.17 | 95.15 | 4.85 | 3-8 |

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